

ABSTRACT

10  
The present invention provides a method for concurrent  
achiral nucleotide modification and amplification using PCR.  
5 Provided by this method are NF- $\kappa$ B specific thioaptamers of  
novel sequence. This invention further provides methods of  
post-selection aptamer modification wherein one or more  
selected nucleotides of aptamers of known sequence are  
substituted with modified achiral nucleotides, particularly  
achiral thiophosphate nucleotides, wherein the substitution  
results in increased nuclease resistance while retaining  
binding efficiency and selectivity. Thiosubstitution of post-  
selection aptamers with specificity for the nuclear factor,  
NF- $\kappa$ B, produced in accordance with this method have increased  
binding affinity and specificity in addition to nuclease  
resistance. Also provided are methods for fractionating  
oligonucleotides depending on their degree of thiosubstitution  
by anion exchange chromatography.